

CLAIMS

What is claimed is:

1. A method of sorting dice by speed comprising:
 - identifying good and bad dice while the dice are part of a wafer;
 - making a wafer map of speed grades of the good dice;
 - dicing the wafer;
 - for a wafer having first and second speed grades different from each other:
 - filling an order for a first package type and the first speed grade by attaching dice of the first speed grade to packages of the first package type; and
 - placing dice of the second speed grade into another location; and
 - completing the process of packaging.
2. The method of sorting dice of Claim 1 wherein the step of placing dice of the second speed grade into another location comprises:
 - filling an order for a second package type and the second speed grade by attaching dice of the second speed grade to packages of the second package type.
3. The method of sorting dice of Claim 1 wherein the step of placing dice of the second speed grade into another location comprises:

placing dice of the second speed grade into a carrier for storage until the second speed grade is ordered.

4. The method of claim 1 comprising the further step of:
marking each of the packages with a mark
indicating the first speed grade.

5. The method of claim 1 wherein the steps of attaching dice are performed by a programmed die attach machine that uses the speed grades in the wafer map.

6. The method of claim 5 wherein the die attach machine further transfers some of the dice to a storage location unpackaged.

7. The method of Claim 5 wherein the die attach machine fills part of an order by attaching dice that have been stored in a storage location to packages of the first package type.

8. A die attach machine comprising:
a mechanism for picking a die from a wafer and
attaching the die to a package;
a program for:
storing a wafer map of good dice and speed
grades;
storing orders specifying device type, speed
grade and package type;

selecting a die indicated by the wafer map as having the speed grade specified by one of the orders, and selecting a package having the package type specified by the one of the orders; and a control mechanism responsive to the program that tells the mechanism for picking which particular die to select from the wafer and in which package to place the die.

9. A method for processing orders for integrated circuit devices comprising:

receiving an order specifying quantity, part, package, and speed grade; searching an inventory of stored dice for dice that match the order; picking one of the stored dice that match the order and attaching the one of the stored dice to a package that matches the order; and updating the order to subtract from the quantity in the order.

10. The method of processing orders of Claim 9 further comprising:

picking from a wafer at least one die that matches the order and attaching the at least one die to a package that matches the order.